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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/584,478

06/23/2006

Shinichi Yoshida

10873.1910USWO

3324

52835

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12/29/2009

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EXAMINER

WALBERG, TERESA J

ART UNIT

PAPER NUMBER

3744

MAIL DATE

DELIVERY MODE

12/29/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/584,478 | YOSHIDA ET AL. | |
| | Examiner | Art Unit | |
| | Teresa J. Walberg | 3744 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 5-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 11 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election without traverse of claims 1-4, 11, and 12 in the reply filed on 27 October 2009 is acknowledged.

2. Claims 5-10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 27 October 2009.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 4, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Wollbeck et al (4,480,683)(cited by applicant).

Wollbeck et al discloses a heat exchanger (Fig. 1) having the claimed structure including a plurality of tubes (8) through which a first fluid passes, a housing (1) in which the tubes (8) are installed (Fig. 1), sealing members (10, 11, 14, 15) for sealing a second fluid that flows over surfaces of the tubes, the housing (1) including an inlet (2) for introducing the second fluid into the housing(1), first and second outlets (3 and 16) for discharging the second fluid out of the housing (1), a tubes being arranged in parallel with one another in the housing (see Fig. 1), the sealing members include at least a first sealing member

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(14 in Fig. 2) positioned on one of end sides of the tubes, a second sealing member positioned on the other end side of the tubes (the sealing member 14 positioned at the opposite, lower, end of the tubes. Note col. 8, lines 51-56 which states that only the upper sealing mechanism is shown, but that the lower sealing mechanism is a "mirror image" of the upper one), and a third sealing member (15) positioned between the first and second sealing members (14), the third sealing member is provided so that a gap (32, 33) is provided between the first sealing member and the third sealing member while another gap (32, 33) is provided (at the opposite end of the tubes) between the second sealing member (14 at the lower end) and the third sealing member (15), and that a flow path (see Fig. 1) is formed therein for guiding the second fluid introduced through the inlet (2) toward the first outlet (3), the second outlets (16) are provided in the housing so as to be connected to the gaps (see Fig. 2).

With respect to claim 2, the flow path for the second fluid is formed in a columnar shape (see Fig. 1), the inlet and first outlet (2 and 3) are formed in a round shape (Fig. 1), and mouths of the flow path for the second fluid are matched with (considered to mean joined to) the inlet and the first outlet (2 and 3, see Fig. 1).

With respect to claim 4, the second fluid is (capable of being) blood (note col. 1, lines 7-8, which state that the device is capable of medical use) and the heat exchanger is adapted to form a part of (interpreted to mean capable of

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being used in) a heart-lung machine (note col. 1, lines 7-8, which state that the device is capable of medical use).

With respect to claim 11, the device is capable of use in a heart-lung machine (note col. 1, lines 7-8, which state that the device is capable of medical use).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wollbeck et al (4,480,683) in view of Otten (3,422,884).

Wollbeck et al, as discussed above, discloses a heat exchanger having the claimed structure with the exception of the tubes being arranged with equilateral triangle spacing.

Otten discloses heat exchanger tubes being arranged with equilateral triangle spacing (see Fig. 2a).

It would have been obvious in view of Otten to arrange the tubes of Wollbeck et al with equilateral triangle spacing the motivation being to use an efficient spacing of the tubes for heat exchange.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 571-272-4790. The examiner can normally be reached on M-F 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Teresa J. Walberg/
Primary Examiner, Art Unit 3744

/TW/